INDIANA UNIVERSITY
BLOOMINGTON, INDIANA

DEPARTMENT OF ZOÖLOGY

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Dr. Sol Spiegelman
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Biological Association
Cold Spring Harbor
Long Island, New York

Dear Sol:

I still have my notes that I used as a basis for my comments on Lindegren's paper and can, I believe, easily reconstruct my discussion. In case you do not get the original from Lindegren in the meantime, I shall rewrite this for you and send it along within a week. At present, I am putting every effort on trying to complete the manuscript of the paper I gave at the conference and think I should keep at it until it is done for I am sure Demerec must already be uneasy about it. Another week should see me through this business and I can then turn my mind to the Lindegren discussion.

In regard to your question concerning the capacity of kappa to multiply feebly in the absence of the K gene, I probably made some mention of this to you without going into it in detail. We have some evidence which might be interpreted in this way, but the interpretation is not yet clear as there are two possible alternatives and we do not know yet which is correct. Here is the situation. After KK killers are crossed to kk sensitives and the killer F1 are allowed to undergo autogamy we find some clones which start out as killers, quickly become mixed (that is, they contain both killer and sensitive animals), and eventually become entirely sensitive. I mentioned this in my first paper on killer genetics, but considered at that time only those cases in which the clone transforms into sensitives rather quickly, within 8 to 10 fissions. This is the usual result. However, within the past few months, in a more intensive study of the matter, we find that there are some clones which take very much longer to transform completely into sensitives, some of them take 30 to 40 fissions or more. In view of what we now know about the number of particles of kappa present at the start in a killer, it is obvious that there must be some reproduction of kappa in these clones that have so long a lag period before kappa disappears. The basic question, of course, and one which must be answered before any interpretation can be given to the phenomena, is whether these clones are kk or KK. We have tested the matter only in the clones that transform rapidly. Those are the kk clones and there is no need

to assume any reproduction of kappa in them. We are now in the process of analyzing the genotype of the clones that have the very long lag periods and should have the answer within a few weeks. If they also turn out to be kk then we have the problem of finding out how it is that kappa can be reproduced in such clones. On the other hand, if they turn out to be KK then our problem is to account for the disappearance of kappa. I suspect that we are going to find that the latter alternative is correct, and I already have a clue as to what makes kappa disappear. But, this is jumping too far ahead and we had better not go into the possibilities until we find out what genotype is involved in these cases.

I hope you are continuing to have a stimulating and pleasant time at Cold Spring.

With best regards to you and my other friends,

Cordially yours,

Tracy Sonneborn